



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Thakur et al.

Serial No.: 09/654,093

Filed: August 31, 2000

For: A METHOD TO AVOID THRESHOLD VOLTAGE SHIFT  
IN THICKER DIELECTRIC FILMS

§  
§ Group Art Unit: 2815  
§  
§ Examiner: P. Brock II  
§  
§ Atty. Docket: 94-0302.02  
§  
§  
§  
§

17/Reply brief  
J. Steptoe  
5/13/03

REPLY TO THE EXAMINER'S ANSWER DATED FEBRUARY 26, 2003

MS Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Certificate of Mailing (37 C.F.R. § 1.8)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to:  
MS Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date below:

Dear Sir:

4/28/03  
Date Signature

Applicants herein respond to the Examiner's Answer dated February 26, 2003.

I. Section 5 of Examiner's Answer

Section 5 of the Examiner's Answer addresses the Summary of the invention. Significantly, the Summary cites support in the Specification for claim limitations such as a "generally insulative material" and a "generally conductive element" that is "generally laterally coextensive" with an insulating region. (Appeal Brief at p. 2.) Even more significant, the Examiner admits in section 5 of the Answer that "[t]he summary of invention contained in the brief is correct."

RECEIVED  
MAY - 5 2003  
TECHNOLOGY CENTER 2800

## II. Section 10 of Examiner's Answer

Section 10 of the Examiner's Answer addresses the grounds of rejection. Applicants note that this section appears to be taken almost verbatim from the latest final Office Action (*compare* Examiner's Answer at §10 *with* Office Action dated 8/21/02 at p. 2-9) which, in turn, recites arguments from even earlier Office Actions (*see, e.g.*, Office Action dated 2/1/02). Accordingly, Applicants' Appeal Brief already refutes those grounds.

## III. Section 11 of Examiner's Answer

Section 11 of the Examiner's Answer addresses the Response to Applicants' arguments. The Examiner's response spans pages 10 to 25 of the Answer, with no subsection headings indicating which argument is being addressed. For the convenience of the Board, Applicants attempt below to parse the Examiner's response in a logical manner and address the points raised accordingly.

### A. The Examiner's attempt to support the §112 ¶2 rejection.

The Examiner's attempt to support the §112 ¶2 rejection appears to span pages 10-14 of the Answer. The gist of the Examiner's argument seems to be that the Specification must contain express language such as "the term 'generally insulative' is defined to be . . . the term 'generally conductive' is defined to be . . . the term 'generally laterally coextensive' is defined to be . . . " in order to provide sufficient definiteness for those terms in claim 60. Further, the Examiner indicates that use of dictionary definitions is inappropriate, that prior art references using those terms are inapplicable, and that Applicants have misinterpreted case precedent.

Applicants submit that the (1) Examiner's standard for definiteness does not comport with the standard articulated in case precedent, (2) dictionary definitions and prior art references are relevant under case precedent standards, and (3) the Examiner has misinterpreted Applicants' use of case precedent.

Before addressing those points in detail, Applicants alert the Board to the latest admission by the Examiner that may determine the issue. As mentioned above in part I, the Appeal Brief's

Summary of the invention cites support in the Specification for claim limitations concerning a “generally insulative material” and a “generally conductive element” that is “generally laterally coextensive” with an insulating region. (Appeal Brief at p. 2 (*see* 2d paragraph of the Summary).)

In section 5 of the Answer, the Examiner admits “[t]he summary of invention contained in the brief is correct.” Hence, the Examiner has expressly admitted that the Specification provides definiteness for the claim language at issue. Applicants contend that this alone supports the Board’s reversal of the Examiner and withdrawal of the §112 rejection.

### 1. The proper definiteness standard

Applicants’ three points raised above regarding the Examiner’s errors in applying the §112 definiteness standard further support this action by the Board. Applicants emphasize that the standard for definiteness is whether one of ordinary skill in the art would understand the bounds of the claim. (*Miles Laboratories Inc. v. Shandon Inc.*, 997 F.2d 870, 875, 27 U.S.P.Q.2d 1123, 1126 (Fed. Cir. 1993). This case was included in an Appendix to the Appeal Brief.) This precedent further details that, if one of ordinary skill in the art would be reasonably apprised of the invention’s scope, §112 ¶2 demands no more. (*Id.*)

As to whether such an artisan would be so apprised, case precedent stresses that the specification plays a part in guiding one of ordinary skill in the art. (*Id.*; *see also Orthokinetics Inc. v. Safety Travel Chairs Inc.*, 806 F.2d 1565, 1575, 1 U.S.P.Q.2d 1081, 1088 (Fed. Cir. 1986) (emphasis added). This case was included in an Appendix to the Appeal Brief.) However, the ordinary artisan does not approach the Specification with a mind as a blank slate. Rather, for purposes of determining patentability, the ordinary artisan is deemed to be aware of the totality of pertinent prior art. (*In re Carlson*, 983 F.2d 1032, 1038, 25 U.S.P.Q.2d 1207, 1211 (Fed. Cir. 1992); *Chemical Separation Technology Inc. v. United States*, 51 Fed. Cl. 771, 782, 63 U.S.P.Q.2d 1114, 1123-24 (Fed. Cl. 2002). These cases were included in an Appendix to the Appeal Brief.) Further, the totality of pertinent prior art includes within its scope the ordinary meaning of words, as defined by a dictionary (*see Chemical Separation*, 63 U.S.P.Q.2d at 1122), as well as earlier-filed patents (*Carlson*, 25 U.S.P.Q.2d at 1211).

Given this standard, the Examiner’s conclusions that

Appellant has failed to point to any section of the originally filed specification that recites “generally insulative”

Appellant . . . has not pointed to a single passage of the Specification which attempts to define the term [generally conductive]

and

Appellant has failed to specifically point out where in the Specification any support for this phrase [generally laterally coextensive] exists

as well as the text supporting those conclusions demonstrate the Examiner’s failure to apply the appropriate definiteness standard. This alone justifies the Board’s reversal of the Examiner and withdrawal of the rejection.

As for applying the appropriate definiteness standard, Applicants emphasize that the Appeal Brief points out the support in the Specification for definiteness of the claim terms. (Appeal Brief at p. 2 (Summary); Appendix 2, p. 3-4.) The Appeal Brief also highlights the pertinent prior art found in dictionary definitions and prior art that one of ordinary skill in the art is deemed to know when reviewing the Specification. (*Id.* at p. 6-7; Appendix 2, p. 3-4. ) Such background knowledge supports Applicants’ contention that the matters disclosed in the Specification provide sufficient definiteness. Applicants also analogize the current facts to those in case precedent to further support that contention. (*Id.* at p. 7-9.) To the extent that the Examiner characterizes Applicants’ citation to prior art and case precedent in a manner inconsistent with the explanation immediately above, Applicants alert the Board that such characterizations are actually mischaracterizations by the Examiner.

## 2. Specific points raised by the Examiner

Applicants contend that the statements presented above are more than sufficient to justify the Board’s reversal of the Examiner and withdrawal of the §112 rejection. Nevertheless, in the interest of fully replying to the Examiner’s Answer, Applicants address in this section more of the details expressed in the Answer.

a) The Examiner's attempt at quotation

For example, in the first paragraph of the Examiner's response (page 10, section 11 of the Answer), the Examiner attempts to quote excerpts of the Applicants' argument that the Examiner deems to be relevant. Applicants note that the Examiner has made at least one error in the attempted quotation. (Answer at section 11, line 5 (quoting "Applicant's" when the original text is "Applicants" with no apostrophe; *see* Appeal Brief at p. 4).) Moreover, Applicants contend that the entirety of the particular argument is relevant – pages 2 through 4 of Appendix 2 of the Appeal Brief, which contains an Amendment and Response to the Office Action dated 9/4/1. Applicants request that the Board refer to the original text in this and any other instance where the Examiner attempts a quotation. Applicants further request that the Board not limit review to what the Examiner believes to be relevant but instead consider the whole of Applicants' arguments.

b) The Examiner's misapplication of the definiteness standard

What follows in the Examiner's Answer are complaints that Applicants did not provide a formal definition of the terms "generally insulative" and "generally conductive element." Applicants have already addressed these complaints above in part 1, pointing out that they reflect a misapplication of the definiteness standard articulated by case precedent.

c) The Specification's support of the term "generally conductive"

By the middle of page 11 of the Answer, the Examiner concludes that "[i]t is therefore not clear how one of ordinary skill in the art would pick and choose through the Appellant's own Specification to find or determine what originally disclosed 'element' might actually be considered 'generally conductive.'" However, the Examiner then provides at least a partial... answer as to how such an artisan would make that determination. Specifically, the Examiner admits that "the Specification *might* give examples of what *might* be a conductor in the Appellant's (sic) invention." (Emphasis added.) Applicants alert the Board that the Examiner has

made a stronger admission in the past, fully acknowledging that “Applicant (sic) has provided examples of what insulative, conductive and laterally coextensive are in the specification.” (Office Action dated 2/1/02 at p. 8, ¶11.) Applicants request that the Board not be misled by the Examiner’s current characterization of the Specification’s support. Moreover, Applicants note that the Specification is not particularly lengthy – in the issued parent (U.S. Pat. No. 6,462,394), the Specification spans only four and one half columns; as submitted the Specification is less than 11 pages, and the detailed description is less than seven pages – thereby making it relatively easy for one of ordinary skill in the art to determine what the Specification considers to be “generally conductive.” This determination is made even easier given the prior use and plain meaning of the relevant terms, which the artisan would be presumed to know. (*Carlson; Chemical Separation.*) Hence, the Examiner’s conclusions concerning the un-persuasiveness of Applicants’ arguments and propriety of the rejection are untenable.

d) The Specification’s support of the term “generally laterally coextensive”

Starting at the bottom of the Answer’s page 11, the Examiner criticizes the alleged lack of a formal definition of the term “generally laterally coextensive.” Applicants have already addressed this criticism above in part 1, pointing out that it reflects a misapplication of the definiteness standard articulated by case precedent. The Examiner continues at the top of the Answer’s page 12 by arguing that “it would not only take the dictionary definitions of the words generally, laterally, and coextensive to understand what meets and bounds the Appellant is trying to claim, but it would take unnecessary and impractical interpolation of the claim language . . . to justify the [claim] scope.” Applicants again stress that one of ordinary skill in the art would be deemed to have background knowledge, including not only the dictionary definitions of relevant terms but also the use of such terms in the prior art. (*Carlson; Chemical Separation.*) Charged with such knowledge, Applicants contend that there is no risk of the “unnecessary and . . . impractical interpolation of the claim language” that the Examiner fears. As a result, the Examiner’s restated conclusions concerning the un-persuasiveness of Applicants’ arguments and propriety of the rejection are once again untenable.

e) The Examiner's attempt to address case precedent

The Examiner then attempts to address the case precedent cited by Applicants. (Answer at p. 12.) It is not entirely clear which case precedent the Examiner is attempting to address at this point, but Applicants presume it is the *Miles* and *Orthokinetics* cases cited above and addressed on page 5 of the Appeal Brief. Rather than directly address the cases themselves, the Examiner attempts to rephrase Applicants' interpretation of the cases. Specifically, the Examiner tries to convince the Board that Applicants are citing the cases for the proposition that support in the Specification is not needed given the "knowledge held by the ordinary artisan (sic)." The Examiner's misinterpretation of this argument warrants another plea from Applicants that the Board not rely upon the Examiner's interpretations but instead review the original text of those arguments.

The Board's direct review of Applicants' arguments will reveal an emphasis that, under *Miles* and *Orthokinetics*, the specification plays *a part* in guiding one of ordinary skill in the art. (Appeal Brief at p. 5 (emphasis added).) Interestingly, the Examiner cites this statement of Applicants immediately after interpreting the Applicants' arguments to be the exact opposite. (Answer at p. 12, middle ¶.) The Examiner notes an inconsistency but fails to realize the inconsistency is due to the mischaracterization of Applicants' arguments. Applicants contend that *another* factor that guides one of ordinary skill in the art in determining the definiteness of the claim language is the totality of pertinent prior art deemed to be known by that artisan. (*Carlson*, 25 U.S.P.Q.2d at 1211; *Chemical Separation*, 63 U.S.P.Q.2d at 1122-23.)

f) The Examiner's attempt to address prior art

The Examiner subsequently attempts to address that pertinent prior art. (Answer at p. 12-13.) Significantly, the Examiner admits that the prior art describes the claim terms at issue. For example, the Examiner admits that the Payne reference shows what is meant by "generally laterally coextensive," citing Payne's figures 2A and 2B. However, the Examiner then complains

that the current Specification does not incorporate Payne's definition. Applicants contend that such incorporation is not necessary, as the term is known and explained in the prior art (Payne at figs. 2A and B), and one of ordinary skill in the art is deemed to know of that term and its explanation (*Carlson*, 25 U.S.P.Q.2d at 1211; *Chemical Separation*, 63 U.S.P.Q.2d at 1122-23). Hence, the artisan would be able to apply that knowledge to the term as used in claim 60. Moreover, just as Payne's figures support the term, so too do the figures of the current Specification. Applicants have early and often cited FIG. 3 for support of the term "generally laterally coextensive," and the most recent citation elicited an admission from the Examiner that the term is indeed supported. (Appeal Brief at p. 2 (Summary); Answer at p. 3 (section 5).)

The Examiner attempted to make similar arguments concerning the other references – admitting that the prior art addresses those terms but focusing on the fact that the reference's language is not incorporated into the current Specification. Applicants contend that for the same reasons articulated immediately above, such arguments are untenable.

g) The Examiner's attempt to address additional case precedent

At the bottom of page 13, the Examiner attempts to address Applicants' analogy to case precedent. Curiously, the Examiner admits that Applicants are "correct on the conclusion of definiteness support." Also significant is the Examiner's acknowledgement that Applicants have shown that definiteness "requires no more than what is already in the Specification and claims." Applicants contend that such admissions by the Examiner further support the reversal of the Examiner and withdrawal of the §112 rejection. Such admissions certainly do not support the Examiner's subsequent conclusion at the top of the Answer's page 14 that the Specification is inadequate.

B. The Examiner's attempt to support the §103 rejections.

The Examiner's attempt to support the §103 rejections appears to span pages 14-25 of the Answer. Attempts to support particular prior art combinations are addressed separately below.



1. The Examiner's attempt to support the Doan/Boland combination.

The Examiner's attempt to support the Doan/Boland combination appears to span pages 14-19 of the Answer. Applicants attempt to further subdivide the points raised by the Examiner related to this combination and address them separately below.

a) The Examiner's raising a new rejection

The Examiner begins by addressing Applicants' contention that the Examiner's citations to Doan do not support the Examiner's arguments. Curiously, rather than begin by addressing Doan or the arguments, the Examiner believes it "necessary" to first understand the disclosed invention. Applicants respectfully disagree and suggest that the Board first compare what Doan expresses with what the Examiner believes Doan expresses. Per the relevant arguments in the Appeal Brief (p. 10-13), Applicants contend that the Board will find that the Doan figures and text cited by the Examiner describe mainly physical structures and fail to describe the properties relied upon by the Examiner for rejection.

Perhaps the reason that Examiner feels the need to quickly turn to the current Specification is that the Examiner is attempting to explain how the latest arguments are not based on matters deemed to be inherent in the cited references. This is understandable given that the current arguments cite the same Doan reference in making the same argument to reach the same conclusion as that reached in a previous office action, only the previous rejection was admittedly based on matters deemed to be inherent in Doan. (*Compare* Final Office Action, dated 8/21/02 at p. 3-4 ¶#5 with Final Office Action dated 2/1/02 p. 3 at ¶#5.) Indeed, the Examiner is quite emphatic in arguing that this latest rejection is not based on matters deemed to be inherent in Doan. (Answer at p. 16, last line.) The result is that the Examiner's Answer attempts to support a rejection based on two sources – Doan/Boland – by using a third source -- matters expressed in the current Specification.

Unfortunately, the Examiner's reliance on a new source raises other problems for the rejection. First, Applicants note that the Examiner has again misquoted the Specification's text. From pages 14 to 15 of the Answer, the Examiner attempts to quote the full text of the

Specification ranging from page 7, lines 7-29. However, the Examiner skipped line 8 with no indication that text was being omitted. This provides another example of the pitfalls the Board faces in relying on the Examiner's attempts at quotation. Second, the matters expressed in the current Specification in no way alter Doan's express disclosure and hence do not cure the defects of the Examiner's argument. Third, Applicants alert the Board that the matters expressed in the current Specification were not relied upon in the Answer's Grounds of Rejection or in the Final Office Action. Hence, the Examiner is attempting to raise a new ground of rejection in the Answer – relying on a combination of Doan and Boland *and* matters expressed in the current Specification. This is prohibited by 37 C.F.R. §1.193(a)(2) and MPEP §1208.01. Fourth, the fact that the Examiner feels the need to combine newly cited matters to the old Doan/Boland combination is an implicit admission that the Doan/Boland combination is an insufficient basis for rejection. Accordingly, Applicants request that the Board reverse the Examiner, withdraw the rejection, and allow the claims rejected under this basis.

b) The Examiner's comments of a personal nature

Returning briefly to the Examiner's closing off the possibility that the Doan/Boland rejection is actually based on matters deemed to be inherent in Doan. Applicants note that, in doing so, the Examiner accused Applicants of attempting to dissuade the Board from realizing what is disclosed in the Specification. As the only recent focus on what is disclosed in the Specification in terms of the Doan/Boland rejection did not occur until after the Appeal Brief, the Examiner's accusations have no basis in fact. Moreover, Applicants submit that the Examiner's accusation borders on violating the rule that "everything of a personal nature must be avoided" when choosing language for rejecting claims. MPEP 707.07(d).) Applicants request that the Board not let that comment distract from the defects in the Examiner's rejection.

c) The Examiner's additional comments of a personal nature and failure to consider the references as a whole

Another instance in which the Examiner appears to disregard this rule is at the top of page 17 of the Answer, wherein the Examiner accuses Applicants of confusing the issue. This portion of the Examiner's Answer appears to address Applicants' arguments wherein it is pointed out that, when Doan and Boland are considered as a whole, their teachings conflict to the point that one of ordinary skill in the art would be discouraged from combining them. Applicants request that the Board not let the Examiner's personal comment distract from the defects in the Examiner's rejection. The Examiner in fact subsequently admits to failing to consider the references as a whole – expressing that “only Boland's substrate is used in the rejection.”

Applicants, on the other hand, do offer an analysis of Doan and Boland as a whole. (Appeal Brief at p. 13-15.) Such consideration reveals that Boland's teachings indicate Doan frustrates the very thermal budget concerns highlighted by Doan itself. (*Id.* at 14.) The Examiner's Answer attempts to dismiss this conflict by arguing that the thermal budget issues does not concern the Examiner's proposed combination. (Answer at p. 17-18.) Applicants submit that the thermal budget teachings are part of the whole of the Doan reference and hence must be considered. (*see Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985). A copy of this case was provided in an appendix to the Appeal Brief.) More particularly, the thermal budget teachings must be considered in light of how they result in a conflict with Boland's teachings (*see In re Young*, 927 F.2d 588, 18 U.S.P.Q.2d 1089, 1091 (Fed. Cir. 1991). A copy of this case was also provided in an appendix to the Appeal Brief.) The Examiner was therefore obligated to consider Doan's thermal budget issues, and the Examiner's ignoring those issues in favor of focusing on particulars believed to be necessary for rejection demonstrates a failure to meet the standards required for rejection.

Considering Doan and Boland as a whole also raises questions about their conflicting planarization techniques. At page 14 of the Appeal Brief, Applicants noted that one of ordinary skill in the art would know that Doan (1) seeks to avoid stress that would deform a workpiece surface; and (2) planarizes by way of thermal reflow. The artisan would also know that Boland planarizes using chemical mechanical planarization (CMP). Applicants further posited that the

artisan would fear that Boland's CMP would expose Doan's workpiece surface to the very type of stress Doan seeks to avoid. At page 18 of the Answer, the Examiner dismissed this as speculation. Applicants contend that the mechanical force component of chemical *mechanical* planarization cannot be denied and that it would be reasonable for one of ordinary skill in the art to reflect on whether such a force would have a detrimental effect on the workpiece. This is especially true when the concern for deformation of a workpiece surface is touted. Applicants submit that such reflection itself is a discouragement to combining the references.

d) The Examiner's untenable motive to combine Doan and Boland

The Examiner subsequently defends the proposed motivation for combining Doan and Boland. (Answer at p. 18.) In doing so, however, the Examiner once again attempts to quote language from the Appeal Brief and once again fails. Specifically, in the middle of the purported quote of the text at page 15 of the Appeal Brief, the Examiner inserts about four lines worth of parenthetical comments that do not appear in the text and do not accurately reflect Applicants' intent. Applicants again request that the Board not rely on the Examiner's attempts at quoting and interpreting Applicants' statements and instead review the original text of the Appeal Brief statements in their proper context. Such a review will reveal that Applicants were referring to a simpler version of the need articulated by the Examiner. Specifically, Applicants were referring to only the need for smaller, denser devices with a larger number of vertically stacked devices. Hence, the Examiner's subsequent reference to Doan's lack of active areas has no bearing on the Examiner's attempt to refute Applicants' argument.

e) The Examiner's admitted reliance on hindsight

Applicants suggested in the Appeal Brief that the Examiner's admitted ability to ignore the fundamental conflicts between the references (and instead focus solely on portions of Doan and Boland that purportedly support rejection) is based on the improper use of hindsight. (Appeal Brief at p. 15) The Examiner responded on pages 18-19 of the Answer by admitting that hindsight was used to determine obviousness. Curiously, the Examiner cited no authority for that

proposition. Applicants suspect that the Examiner may be relying on *In re McLaughlin* (443 F.2d 1392, 170 U.S.P.Q. 209 (C.C.P.A. 1971)) for support. (A copy of this case was provided in an appendix to the Appeal Brief.) However, *McLaughlin* actually favors Applicants in that it highlights the Examiner's failure to meet the burden for this obviousness rejection. *McLaughlin* emphasizes that, in considering whether to combine references for an obviousness rejection, the Examiner must consider what the references "*taken as a whole* would suggest to one of ordinary skill in the art." (*McLaughlin*, 170 U.S.P.Q. at 212 (emphasis added).) Applicants assert that considering the references as a whole necessitates more than merely focusing on their points that may arguably support an obviousness rejection; rather, it further requires considering other points as well, including the conflicts between the references, as required by *Young*. The Examiner's attempt to dismiss such conflicts demonstrate the Examiner's failure to satisfy the standards set forth by the very case precedent cited by the Examiner.

Moreover, the Examiner's attempt to dismiss the conflicts between the references suggests that the Examiner has ignored those conflicts and somehow been able to focus on certain aspects of the references that justify, in the Examiner's mind, the rejection of the relevant claims. Applicants submit that the guidance for such focus can only come from the current application. In using the current application in such a manner, the Examiner has violated another tenet of *McLaughlin*, which requires that the "[j]udgment on obviousness . . . not include knowledge gleaned only from applicant's disclosure." (*McLaughlin*, 170 U.S.P.Q. at 212.) Thus, the conflicts within the Doan/Boland combination and the Examiner's attempt to dismiss those conflicts warrant a withdrawal of any rejection relying on that combination.

## 2. The Examiner's attempt to support the Doan/Cunningham combination.

The Examiner's attempt to support the Doan/Cunningham combination appears to span pages 19-21 of the Answer. Applicants attempt to further subdivide the points raised by the Examiner related to this combination and address them separately below.

a) The Examiner's raising a new rejection

The Examiner begins by emphasizing that this combination, just as the last one, is not based on teachings inherent in Doan. In a further parallel to the last combination, the Examiner then attempts to bring in a new source of art for the rejection – matters addressed in the Specification. As a result, the Doan/Cunningham combination suffers the same problems as the as previous attempted combination. Namely, Doan does not express what the Examiner says it does; matters addressed in the Specification do not change that fact; the Examiner's new reliance on matters addressed in the Specification constitute a new rejection that should not be raised for the first time in the Answer; and the Examiner's reliance on matters addressed in the Specification constitute an implicit admission that the Doan and Cunningham sources alone are insufficient for rejection.

b) Consideration of Doan and Cunningham as a whole

In the last paragraph of the Answer's page 19, the Examiner attempts to refute the Applicants' articulated conflicts between the references when they are reviewed as a whole. Significantly, the Examiner acknowledges that applying Doan to Cunningham would result in an additional layer in Cunningham's device. The Examiner stresses that there is no particular prohibition against such in Cunningham. Applicants' stress that there is a general desire in the art to reduce time, money, and effort in fabricating devices. The Examiner's acknowledgement concerning the Doan/Cunningham combination indicates that such a combination frustrates that desire and therefore discourages combination.

The Examiner then argues that the notion of Doan modifying Cunningham is moot because the Examiner's focus is Cunningham modifying Doan. Such an admission highlights yet another failure of the Examiner to consider the references as a whole, including potential conflicts between references. Indeed, the Examiner does not appear to have considered the references as a whole until the Answer, wherein the Examiner then makes statements that discourage combination, such as the statement addressed in the paragraph above and a

subsequent statement wherein the Examiner admits that “[t]here is nothing that Doan adds to Cunningham.” (Answer at p. 20.)

In the face of such admissions, the Examiner then acknowledges the obligation to consider the references as a whole. Nevertheless, the Examiner yet again admits to focusing on the combinations proposed in the final Office Action and dismisses Applicants’ arguments as “fabrications” and “made up embodiments” intended to “draw attention away from the rejection.” Applicants request that the Board not let the Examiner’s comments of a personal nature distract from Applicants’ arguments and the Examiner’s admissions, which demonstrate a failure to satisfy the acknowledged duty to consider the references as a whole, including their conflicts.

c) The Examiner’s untenable motive to combine Doan and Cunningham

The Examiner’s Answer next addresses Applicants’ argument against the purported motive to combine Doan and Cunningham. (Answer at p. 20-21.) The Examiner begins with still another misquotation of Applicants’ argument, deleting an entire line of text without indicating an omission in the direct quote. (*Compare* Answer at p. 20 *with* Appeal Brief at p. 19.) The Examiner then misquotes the Cunningham reference, including the term “layer” in a direct quote, wherein that term is not present in the original text. Applicants once again plead that the Board not rely on the Examiner’s attempts at direct quotation and instead refer to the original texts to avoid these and any other errors. The Examiner then admits that “the growth of gallium arsenide is not required in Doan.” (Answer at p. 21.) Applicants would extend this further, arguing that there is absolutely no disclosure in Doan that suggests the need for growing gallium arsenide. Applicants in fact argued so (Appeal Brief at p. 19), and the Examiner does not appear to be refuting this. The Examiner then admits that Doan already provides a nitride layer. Hence, Applicants’ submit that one of ordinary skill in the art would have no motivation to consult Cunningham’s teachings concerning nitride. As a result, the Examiner’s misquotations have no bearing on the motive to combine, and the Examiner’s admissions further refute the Examiner’s own purported motive to combine.

### 3. The Examiner's attempt to support the Doan/Cunningham/Ying combination.

The Examiner's attempt to support the Doan/Cunningham/Ying combination appears to span pages 21-23 of the Answer. Applicants attempt to further subdivide the points raised by the Examiner related to this combination and address them separately below.

#### a) The Examiner's additional comments of a personal nature

The Examiner begins by making still another comment of a personal nature, accusing Applicants of attempting to divert attention. Applicants contend that each such accusation appears to be in response to Applicants' efforts at analyzing the relevant references as a whole, including whether their teaching conflict with one another. Applicants contend that such statements are an inadequate defense to the Examiner's uncanny focus on particular teachings, admissions to which seem to follow immediately after such personal comments.

This current example is no exception, as in the last paragraph of page 21, the Examiner admits to focusing on Ying's disclosure concerning reflow time and on the particular combination articulated in the Final Office Action. This paragraph is also significant in that the Examiner appears to acknowledge that the references contain contrary teachings. The Examiner couches this acknowledgement in terms of what the references "might" disclose. Given the legion of examples above concerning the Examiner's trouble with communicating the basic text of others, Applicants urge the Board to review the original text of Doan, Cunningham, and Ying. Applicants submit that the Board will find that the references conflict on all levels, ranging from their broad teachings to their specifics, as articulated in pages 20-21 of the Appeal Brief.

#### b) Cunningham and Ying's conflicting teachings

Also in this paragraph of the Answer, the Examiner points out that, while Applicants cite Cunningham's testing parameters, testing is not mentioned in the claims. While technically true, Applicants emphasize that Applicants are not attempting to distinguish the claims from the combined references. Rather, Applicants are highlighting the conflicts between the references



that would discourage their combination. This particular Cunningham citation supports the notion that Cunningham favors long term high temperature processes and emphasizes a conflict with Ying, as admitted by the Examiner. (Appeal brief at p. 21.)

Applicants' review of that portion of the Appeal Brief reveals a typographical error. The original text reads as follows.

Thus, the express language of Cunningham and Ying, as well as the Examiner's own admissions, demonstrate that *Ying* encourages long term high temperature processes, while *Cunningham* eschews such processes in favor of short term high temperature processes and long term low temperature process.

(Appeal brief at p. 21 (emphasis added).) Reading the text in context, however, reveals that the references should be switched so that the excerpt reads as below.

Thus, the express language of Cunningham and Ying, as well as the Examiner's own admissions, demonstrate that *Cunningham* encourages long term high temperature processes, while *Ying* eschews such processes in favor of short term high temperature processes and long term low temperature process.

c) The Examiner's admissions of failure to abide by case precedent

Returning to the Examiner's Answer, the Examiner claims at the top of page 22 to not know where there has been an admission of failure to abide by case precedent. Applicants alert the Board that such an admission of failure occurs every time the Examiner indicates that a conflict between references is not relevant to the particular combination relied upon. Such an admission of failure also occurs every time the Examiner admits to relying upon "only" a particular component or excerpt from a reference. Such statements are admissions that the references have not been considered as a whole and that their conflicting teachings have not been properly considered. That lack of consideration is legally improper in light of the holding of case precedent such as *Interconnect*, *Gore*, and *McLaughlin*. Such statements also suggest that the Examiner improperly used hindsight gleaned from the current invention, thereby conflicting with another tenet of *McLaughlin*. Moreover, the very paragraph in which the Examiner denies

failure to abide by case precedent contains more of such statements, as does the second paragraph of page 22.

d) The Examiner's misplaced focus on attacking references individually

Also in the second paragraph of page 22, the Examiner argued that non-obviousness is not shown by attacking references individually. This proposition is not relevant to Applicants' arguments, as Applicants are not attacking individual references as they apply to the current invention. Rather, Applicants are attacking the Examiner's decision to combine the references by highlighting the conflicts between them. Thus, while the Examiner's statement of the law may be correct, that law has no bearing on the current facts. Rather, the standard posed in *Interconnect* and *Gore* is the relevant rule, and Applicants request that the Board consider the impropriety of the Doan/Cunningham/Ying combination in light of that standard.

4. The Examiner's attempt to support the Doan/Ghezzi combination.

The Examiner's attempt to support the Doan/Ghezzi combination appears to span pages 23-25 of the Answer. Applicants attempt to further subdivide the points raised by the Examiner related to this combination and address them separately below.

a) The Examiner's raising a new rejection

As with the previous combinations, the Examiner attempts to rely on a third source -- matters addressed in the Specification -- to justify a rejection based on two other sources -- Doan and Ghezzi -- without a claim that inherency is relied upon and without admitting this is effectively a new rejection. Thus, the Doan/Ghezzi combination suffers in the same manner as the previous combinations. Namely, Doan does not express what the Examiner says it does; matters addressed in the Specification do not change that fact; the Examiner's new reliance on matters addressed in the Specification constitute a new rejection that should not be raised for the first time in the Answer; and the Examiner's reliance on matters addressed in the Specification

constitute an implicit admission that the Doan and Ghezzi sources alone are insufficient for rejection.

b) The Examiner's misinterpretation of Doan.

The Examiner then responded to a particular misinterpretation of Doan highlighted by Applicants. (See Appeal Brief at p. 24; Answer at p. 23-24.) Specifically, Applicants noted that the Examiner relies upon Doan depositing an insulative material that is less insulative than an underlying barrier. (Office Action dated 8/21/02 at p. 7.) While Doan indicates that its second layer 50 (1) may be selected from one list of materials; and (2) is over a film 40 that may be selected from another list of materials, there is nothing in Doan specifying the relative insulative qualities of the two layers. (Doan at col. 4, ln. 38-43 (listing materials for layer 50); ln. 17-20 (listing materials for film 40).) The Examiner argued in the Answer that, from the lists of materials, Doan discloses TEOS over silicon nitride. Applicants note that from the lists of materials, Doan discloses depositing an insulative material that is *more* insulative than an underlying barrier. Specifically, Doan discloses TEOS, silicon oxide, or tantalum oxide over titanium nitride. (Doan at col. 4, ln. 17-43.) To the extent Ghezzi is in agreement with such an arrangement, the combination teaches away from the materials' relative insulative properties relied upon by the Examiner. To the extent Ghezzi is silent on this matter, Doan's contribution still results in the combination teaching away from the materials' relative insulative properties relied upon by the Examiner. To the extent Ghezzi is in conflict with such an arrangement, the references teach away from each other. In fact, Doan's focus in terms of material selection is that the material maintain its rigidity and structural integrity upon subsequent heating steps, rather than the materials' relative insulative properties. (Doan at col. 4, ln. 17-27.) Thus, at best for the Examiner, Doan provides no clear direction in the art concerning the materials' relative insulative properties. At worst, the references teach away from the property relied upon by the Examiner and perhaps teach away from each other. Applicants submit that any of these options demonstrate that the rejection is untenable.

c) The Examiner's misinterpretation of Ghezzi.

The Examiner subsequently responded to a particular misinterpretation of Ghezzi highlighted by Applicants. (*See* Appeal Brief at p. 26; Answer at p. 24.) In the Final Office Action, the Examiner cited a conductive element and an insulating region in Ghezzi, claiming they were generally laterally coextensive. (Office Action dated 8/21/02 at p. 7; Answer at p. 8-9 (citing Ghezzi's elements 5 and 21 in FIG. 3).) Applicants pointed out that Ghezzi's insulation 21 extends only from one field oxide region 11 to another. (Appeal Brief at p. 26.) Applicants also pointed out that Ghezzi's conductive element 5 extends much further laterally – extending not only from one field oxide region 11 to another but also over multiple field oxide regions 11 as well as over coupling area 12. (*Id.*) Applicants concluded that Ghezzi's conductive element 5 cannot be described as being generally laterally coextensive with Ghezzi's insulation 21. (*Id.*)

The Examiner argued that the Ghezzi elements other than conductive element 5 and insulation 21 are not relevant. (Answer at p. 24.) Applicants contend that such elements are relevant in that they serve as reference points for gauging general lateral coextensivity. When applied for such a purpose, those other Ghezzi elements demonstrate that Ghezzi's conductive element 5 cannot be described as being generally laterally coextensive with Ghezzi's insulation 21.

d) The Examiner's emphasis on the wrong argument

The Examiner then returns to Applicants' discussion of Doan, quoting a portion of Applicants' argument wherein Applicants paraphrased the Examiner's basis for rejection. Specifically, Applicants stated, and the Examiner correctly quoted, the following,

the Examiner further interpreted Doan as disclosing refraining from depositing a conductive material before depositing an insulative material.

(Answer at p. 24 (citing Appeal Brief at p. 25).) The Examiner then suggests Applicants misstated the Examiner's argument. As a result, the Examiner's response is limited to a second

quote from the Final Office Action directed to what the Examiner believes to be the rejection at issue.

Applicants contend that the Examiner's second quote is directed to the wrong portion of the Office Action. It is significant that Applicants' argument is directed to the rejection of claim 64. The Examiner addresses claim 64 in the final Office Action with the following language.

With regard to claim 64, Doan discloses in figure 6 refraining from depositing any generally conductive material before the step of depositing a generally insulative material.

(Office Action dated 8/21/02 at p. 8; Answer at p. 9.) This is the Examiner argument that Applicants were referring to in the relevant portion of the Appeal Brief. Applicants acknowledge that the restatement of the Examiner's argument is not a word-for-word recitation, but it did not claim to be. Applicants submit that the substance of the Examiner's argument was accurately communicated by Applicants. Applicants further submit that the Examiner's second quotation is irrelevant to this point and is therefore an inadequate response to Applicants' support of claim 64.

e) The Examiner's misplaced focus on attacking references individually

The Examiner then once again accuses Applicants of attempting to defeat an obviousness rejection by attacking the references individually. Once again, this proposition is not relevant to Applicants' arguments, as Applicants are not attacking individual references as they apply to the current invention. Rather, Applicants are attacking the Examiner's decision to combine the references by pointing out the differences between Doan and Ghezzi in an effort to show a lack of motivation to combine. Thus, while the Examiner's statement of the law may be correct, that law has no bearing on the current facts. Rather, the standard posed in *Interconnect* and *Gore* is the relevant rule, and Applicants request that the Board consider the impropriety of the Doan/Ghezzi combination in light of that standard.

f) The Examiner's de-emphasis of Ghezzi's teachings

At the end of defending the Doan/Ghezzi combination, the Examiner suggests that Ghezzi lacks discussion regarding planarity. (Answer at p. 25.) Applicants contend that Ghezzi does more than passively lack discussion regarding planarity. Rather, Ghezzi actively teaches that planarity is not an issue. This is expressly illustrated in Ghezzi's figures 2, 3, 4. Applicants reiterate that, when this teaching is viewed against Doan's invention, whose whole purpose is planarity, the result is a conflict in teachings that discourage one of ordinary skill in the art from combining the references. (See Appeal Brief at p. 27.)

5. The Examiner's attempt to support the Doan/Ghezzi/Van Der Scheer combination.

The Examiner's attempt to support the Doan/Ghezzi/Van Der Scheer combination appears to span four lines – two sentences – on page 25 of the Answer. The Examiner merely noted that Applicants have proposed possible combinations of the three references and concluded Applicants' arguments were unpersuasive.

Applicants note, however, that the Examiner has yet to clearly articulate *any* combination of Doan and Ghezzi, let alone Doan, Ghezzi and Van Der Scheer. This is despite Applicants' pleas throughout the prosecution history. (See Appeal Brief at p. 26-27.) The Examiner has left Applicants to speculate as to the exact Doan/Ghezzi/Van Der Scheer hybrid contemplated by the Examiner. The natural result has been Applicants' proposed possible combinations of the three references. Those proposed possible combinations are also the result of considering each of the references as a whole, including their contrary teachings. Applicants make no apologies for doing so, and the Examiner's criticism only highlights the Examiner's own failure to abide by the standards set forth by case precedent for supporting an obviousness rejection.

Applicants also alert the Board that Applicants raised other issues with the Doan/Ghezzi/Van Der Scheer combination that the Examiner does not appear to have addressed in the Answer. For example, Applicants pointed out that Van Der Scheer's teachings conflict with those in both Doan and Ghezzi. In addition, Applicants demonstrated that Van Der Scheer's

teachings are directed to the oil industry and are therefore non-analogous to the art addressed in the claims as well as the art addressed in Doan and Ghezzi. Such conflicts warrant the Board's reversal of the Examiner and withdrawal of the rejections, as does the Examiner's failure to address those conflicts.

C. The Examiner's attempt to discount policy violations.

The Examiner's attempt to discount policy violations appears to span the last two paragraphs of page 25 of the Answer. The Examiner suggests that such violations have no bearing on the claimed invention or the rejection. Applicants contend that the Examiner's policy violations have bearing in that they provide still further support for the Board's reversal of the Examiner, withdrawal of the rejections, and allowance of the claims, given the substantive problems of the rejections. The Examiner then argues that Applicants should have brought up such arguments in a petition before Appeal. Applicants already addressed this point in the Appeal Brief, indicating that.

[w]hile Applicants are not arguing against the finality of that Office Action, Applicants do submit that the finality of that Office Action further demonstrates the Examiner's contradiction of the PTO's own standards and their underlying policies.

(Appeal Brief at p. 31.) Thus, Applicants merely cited the Examiner's conduct to demonstrate a pattern of disregard for the PTO's own policies. That pattern is further demonstrated in the Answer.

For instance, the Examiner attempts to introduce new art – alleged prior art from the Specification – to support rejections based on other prior art references. As the Examiner has vehemently denied that the new art demonstrates inherent matters in the previous references, the only conclusion remaining is that the Examiner is presenting a new combination in support of rejection. It is inappropriate to do so in the Answer. (37 C.F.R. §1.193(a)(2); MPEP §1208.01.)

As another example, Applicants have cited above several instances wherein the Examiner's comments could be construed to be of a personal nature and are therefore in conflict with MPEP 707.07(d).

Still another example can be found in the Examiner's repeating the rejections from the Final Office Action yet failing to adequately address Applicants' traversals concerning the Doan/Ghezzi/Van Der Scheer combination. The result of such failure brings the Examiner into conflict with MPEP §707.07(f), the details of which are addressed in the Appeal Brief (p. 31-34).

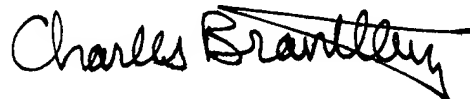
Thus, the Answer provides still more instances of the Examiner's breaches of the required standards of prosecution. Applicants further contend that any one or combination of those breaches further support the Board reversing the Examiner, withdrawing the rejections, and allowing the claims.



#### IV. Conclusion

The Answer demonstrates several of the Examiner's misinterpretations of Applicants' arguments; the Examiner's misunderstanding of the rejection standards set forth by case precedent; and a legion of the Examiner's misquotations that fail to refute Applicants' arguments and fail to support the Examiner. The Answer also contains several admissions of the Examiner's failure to consider the references as a whole, wherein the Examiner instead focused only on particular teachings and on the particular combination believed necessary for rejection. Further, the Answer provides additional instances of policy violations, including the Examiner's attempt to introduce several new rejections in the Answer; making comments of a personal nature; and failing to answer all material traversed. As a result, the Answer in no way deters the Board's reversal of the Examiner, withdrawal of all rejections, and allowance of the appealed claims.

Respectfully submitted,

A handwritten signature in black ink that reads "Charles Brantley". The signature is written in a cursive style with a long horizontal stroke extending from the end of the name.

Charles Brantley  
Registration No. 38,086  
Micron Technology, Inc.  
8000 S. Federal Way  
Boise, ID 83716-9632  
(208) 368-4557  
Attorney for Applicants

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ ) 0

## Complete if Known

Application Number 09/654,093  
 Filing Date August 31, 2000  
 First Named Inventor Thakur et al.  
 Examiner Name P. Brock II  
 Group / Art Unit 2815  
 Attorney Docket No. 94-0302.02

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money ☐ Other ☐ None  
 Order

☒ Deposit Account:Deposit  
Account  
Number

13-3092, Order No. 94-0302.02

Deposit  
Account  
Name

Micron Technology, Inc.

The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments  
☒ Charge any additional fee(s) during the pendency of this application  
☐ Charge fee(s) indicated below, except for the filing fee  
 to the above-identified deposit account.

## FEE CALCULATION

## 1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	750	2001	375	Utility filing fee	
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$ ) 0

## 2. EXTRA CLAIM FEES

Total Claims	13	-20 **	=	0	X	18	=	0
Independent Claims	4	-4 **	=	0	X	84	=	0
Multiple Dependent					X		=	0

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	84	2201	42	Independent claims in excess of 3	
1203	280	2203	140	Multiple dependent claim, if not paid	
1204	84	2204	42	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					(\$ ) 0

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

## 3. ADDITIONAL FEES

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	410	2252	205	Extension for reply within second month	
1253	930	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	750	2809	375	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	750	2801	375	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) \_\_\_\_\_

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$ ) 0

## SUBMITTED BY

Complete (if applicable)

Name (Print/Type) Charles Brantley Registration No. Attorney/Agent 38,086 Telephone 208-368-4557  
 Signature Charles Brantley Date 7/28/03

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.